

Remarks

This amendment responds to the official action mailed March 29, 2007, wherein allowable subject matter was indicated for claims 13-18; claims 1-3 were rejected as anticipated by Galbreath (US 6,929,146) or Tenenbaum (US 3,281,177); and the remaining claims were rejected as obvious from proposed combinations of selected aspects of Galbreath, Tenenbaum, Strader (US 2,288,926) and Lindley (US 5,639,129).

Claims 1, 4 and 9-18 remain pending. Claims 13-18 have been placed in allowable form by combining the subject matter of claim 13 with base claim 1 and intervening claim 12. Claims 13-18 are allowable in accordance with the official action.

Claim 1 has been amended to incorporate certain limitations of the dependent claims that have been canceled. Reconsideration is requested. The differences between claim 1 as amended and the prior art are such that the subject matter claimed, as a whole, is not shown to have been known or obvious.

The invention concerns a heavy duty sealing container of a type that can be used to hold solid waste and water. A gate-like hinged door panel when closed compresses a seal disposed along the junction between the door panel and the frame of the container. This general sort of container is found in the cited patents to Galbreath and Lindley. A problem for a human attempting to close the door panel is that moving the door into its sealed closed position requires force sufficient to compress the seal, which seal resides around the frame.

In applicant's arrangement, the seal resides at the hinge side and along the bottom of the opening and/or door panel from the hinge side to the latch side. As applicant's door panel is hinged from a wide-open position into its ultimate closed position, the seal must be compressed from the hinge side, where leverage is greatest, along to the opposite or latch side, where leverage is least. A typical human does not

have the strength to push the door panel into position and in the process to compress the seal.

According to Galbreath, one solution is to provide a door mechanism that closes at an outer level, free from compression of the seal, together with a mechanism whereby the hinge axis of the door panel can be drawn against the container in a direction perpendicular to the plane of the door panel. In Galbreath (see Fig. 15), an alignment cam 132 receives a pin 139 on the door panel, capturing the pin behind a holding hook 137 with a clearance. In Fig. 15 the clearance is seen by spaces on opposite sides of pin 139. On the latching side (the free side opposite from the hinge axis), clamping upper and lower hooks 123, 125 are operated to draw the panel inwardly and compress the seal. It is the ratchet mechanism on the hooks 123, 125 that compresses the seal. See col. 6, lines 5-7. On the hinge axis side, Galbreath has pressure cylinders that cause the hinge side of the door to be drawing inwardly against the seal. Thus, compression of the seal in Galbreath is achieved by displacing the door panel toward the container in a direction perpendicular to the plane of the door panel.

Lindley has a similar mechanism by which the door panel, including the hinge axis and including the opposite free or latch side, are both mounted so as to be drawn in against the seal in a direction perpendicular to the plane of the door panel. In Lindley and in Galbreath, the door is not mounted to compress the seal simply by pivoting the door panel closed. In both Lindley and Galbreath, the door can be pivoted closed without compressing the seal. That is the point of having a panel that is hinged and displaceable perpendicular to the plane of the door panel.

Applicant's invention can function without the complication of a displaceable hinge axis, but as a result, applicant needs to deal with the problem that pivoting the door panel closes compresses the seal by the pivoting of the door panel alone. Applicant handles this issue by providing an eccentric cam locking bar 60 operated manually using an elongated handle 62 by which leverage is applied to pivot the door panel against the seal. Applicant provides an intermediate latched position at which the seal is partly compressed, held at a position wherein further compression can be

obtained by a handle-operated locking cam bar, because the door panel is held ajar at a position where the door panel cam bar is in range to engage with its keeper and clamp shut the door panel.

Applicant's invention differs from Galbreath and Lindley in that applicant's seal is compressed up to the hinge by closing the door panel because the closure is a hinging closure as opposed to displacement perpendicular to the plane of the door panel. Applicant's claim 1 has been amended to define that the door panel hinges; that the seal is compressed up to the hinge; and that compression of the seal resists closing of the door. This aspect is not found in Galbreath or Lindley, wherein the door pivots freely and compression of the seal is achieved, after the door is hinged "closed," namely by displacing the panel perpendicular to its plane. Therefore the rejection over Galbreath under Section 102 is overcome.

Certain claims were rejected under Section 103 over a combination of Galbreath and Tenenbaum. Tenenbaum has a hinged sealed door. However, Tenenbaum alone or in combination with Galbreath does not meet applicant's invention claimed as a whole.

Reference can be made to Tenenbaum, comparing Figs. 3 and 4, and the explanations appearing at col. 2, lines 9-16 and col. 3, lines 2-13. In Tenenbaum, the door of a semi trailer has a conventional handle-operated cam bar. But there is no disclosure or suggestion or need for an intermediate position at which the cam bar is captured in a position where the seal is partly compressed. Instead, as shown in Tenenbaum's Fig. 3, the cam bar is arranged to engage with the keeper 26 before the seal 34 has come into contact with the container frame. As already discussed, Galbraith and Lindley also lack an intermediate hold position in which the door is ajar and the seal is compressed. Therefore, the combination of prior art references does not meet the invention defined in claim 1 as a whole.

Judging from Fig. 3, the Tenenbaum seal 34 is not compressed until the latching lip 52 is in place to exert the compression force required to compress the seal by operation of the handle 76. This arrangement is suitable for Tenenbaum's semi-trailer

door. However as discussed in applicant's specification, if such a closure is used with a heavy duty container having a stiff seal or the type found in Galbreath or Lindley, the user has a problem when attempting simply to push the door up to a position at which the cam latching lip can engage the keeper. Moving the door panel to that position requires compression of the seal from the hinge side outwardly. As explained by applicant, the user's only option is to slam the door, thus bringing the cam structures momentarily into position to engage, while attempting to operate the latching handle at the precise time and in coordination with slamming the door, so that the cam structures can be engaged before the slamming door bounces back in reaction to compression of the seal.

Applicant has provided a technique whereby a locking cam bar can be used in a heavy duty container without the problems of timing and coordination as described, and without the complication and expense of a seal compression technique that moves the door panel and its hinge perpendicular to the plane of the door. Applicant provided a catch for a door that holds the door panel close enough that the handle operated cam closure is in range of its keeper when the door is shut to a point that partly compresses the seal, for example retaining the door after it is slammed, close enough to permit the keeper to be engaged.

The invention is not known from any of the references, because none discloses a seal that is compressed from the hinge with an intermediate panel-capture mechanism. The invention is not obvious from Galbreath and Tenenbaum because neither of them teaches or suggests any need to overcome compression of a seal in order to operate a cam or keeper. Both have other means that preclude compression of the seal until the ultimate seal compressing mechanism is operated finally to seal the door panel by movement perpendicular to its plane.

Applicant's solution to the problems of heavy duty containers and seals are substantially less complicated and expensive than a door hinge axis displacement mounting as in Galbreath or Lindley. Applicant's solution employs a handle-operated cam lever, as does Tenenbaum, but also is particularly and distinctly defined as having

an intermediate holding or latching position and a seal that compresses from the hinge axis. These aspects distinguish the invention from Galbreath, Lindley and/or Tenenbaum.

In the official action, an alternative rejection was made including Strader's tailgate latch. The Strader latch does not add to the aspects missing from Galbreath and Lindley. Strader has no associated seal or sealing function and simply captures over a protruding tailgate part by means of a pivoting hook. (See Figs. 1-3.) Strader teaches that a gate member can be captured with a spring latch, but there is no reason to conclude that it would be within the level of ordinary skill to apply such a latch to a situation where a compressible seal resists the closure of the gate member. Assuming that Strader's latch is applied to a tailgate with a seal (which is not taught by Strader), there is no reason to believe that it would be routine or obvious to mount a capturing latch for a pivoting gate at a position where the gate is captured not at its final position, but instead being captured when ajar. Only applicant captures a pivoting door in a manner such that further pivoting finally compresses the seal, in particular using the keeper lever mechanism to pivot the panel further to achieve compression of the seal, after engaging the keeper from an intermediate captured position of the hinging door panel. These aspects are not found in the prior art and are not obvious.

The claims as amended such that independent claim 1 particularly and distinctly defines the aspects of a hinged door that compresses a seal during hinging closing movement, the intermediate capture of the panel when ajar and the further compression for the seal with further hinging. The differences between the invention and the prior art are such that the subject matter claimed as a whole is not shown to have been known or obvious.

Applicant is pleased to note the indication of allowable subject matter for claims 13-18. Whereas these claims are in proper form and claim 1 has been amended to distinguish over the art for the reasons discussed above, reconsideration and allowance of claims 1, 4 and 9-18 are respectfully requested.

Respectfully submitted,

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